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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/022,013	12/13/2001	John P. Hansen	SC11218TH	2814

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EXAMINER	
SHECHTMAN, SEAN P	

ART UNIT	PAPER NUMBER
2125	4

DATE MAILED: 08/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/022,013	Applicant(s) HANSEN ET AL.	
	Examiner Sean P. Shechtman	Art Unit 2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 April 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 December 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. Claims 1-11 are presented for examination.

Drawings

2. The drawings are objected to because of the following:

Referring to figure 4, element 78 between the match circuit and timer circuit should be labeled element 79 (See page 9, lines 25-26 of the instant specification). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 states that the second manager operates on a first and second value representative of the first and second domain respectively, wherein said operation occurs in response to the second and third signals provided from the first manager. However, the claim also states that the third signal provided from the first manager is representative of both the first and second domains. Therefore, it is unclear how the second value (operated on by the second manager in response to the third signal) is representative of only the second domain, when the third signal is representative of both the first and second domains.

For purposes of examination, it will be assumed that the third signal provided from the first manager is representative of a second domain.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 11 is rejected under 35 U.S.C. 102(b) as being anticipate by U.S. Pat. No. 3,644,840 to Conner.

Referring to claim 11, Conner discloses a domain control system (Title; Abstract; Col. 1, lines 28-36) comprising:

an input to receive a first signal (Col. 1, lines 54-66);

an output to provide a second signal (Col. 1, lines 54-66), the second signal indicative of a current state of the domain control system (Col. 10, lines 19-60);

a register coupled to the output (See registers in Fig. 1 below), the register to hold the second signal as a plurality of bits, the plurality of bits comprising at least one most significant bit and at least one least significant bit (Col. 8, lines 6-65); and

adder logic coupled to the input and the register (See adder in Fig. 1, below), the adder logic, responsive to the first signal, to adjust a magnitude of the second signal by the at least one most significant bit (Col. 8, lines 41-51).

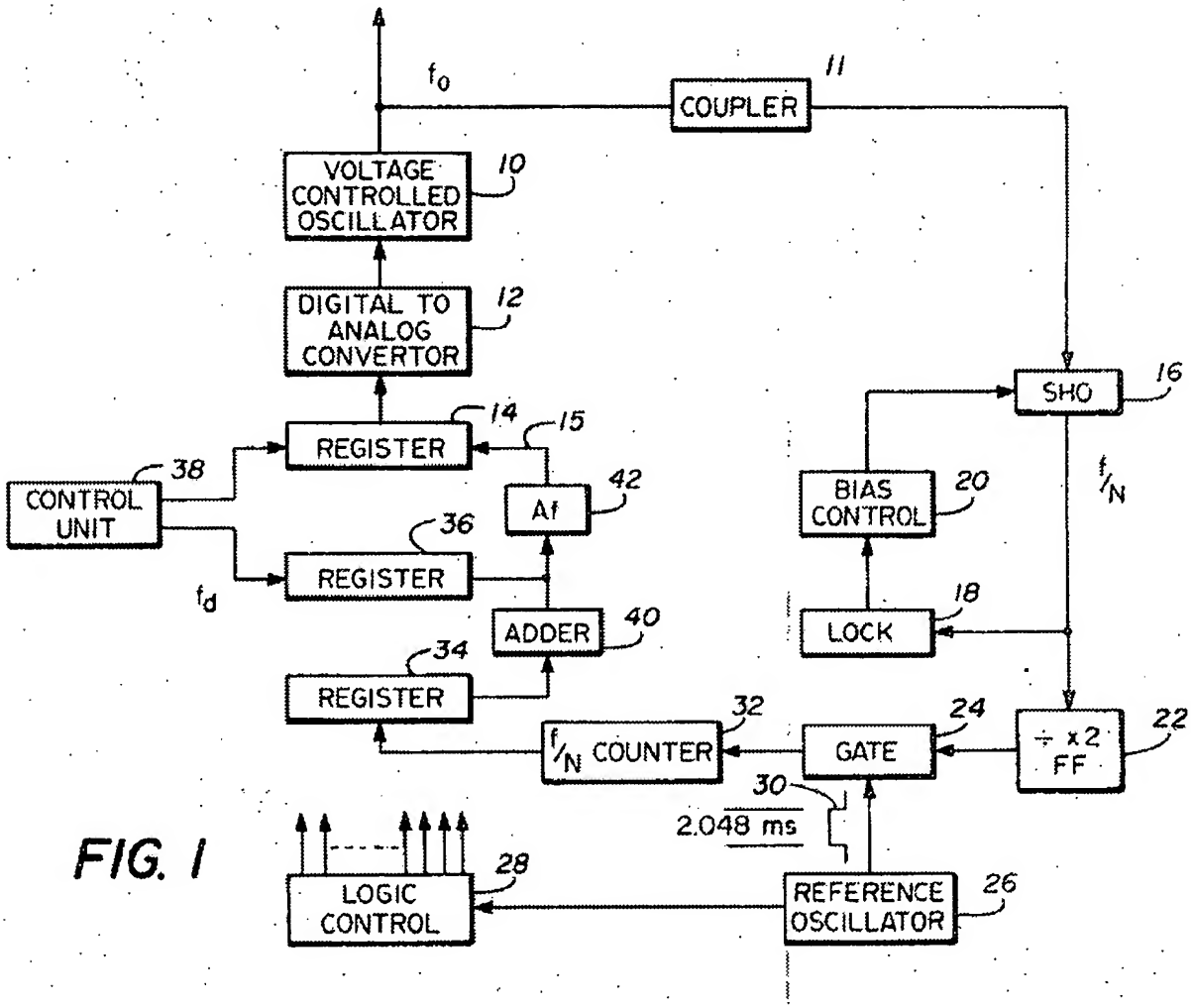


FIG. 1

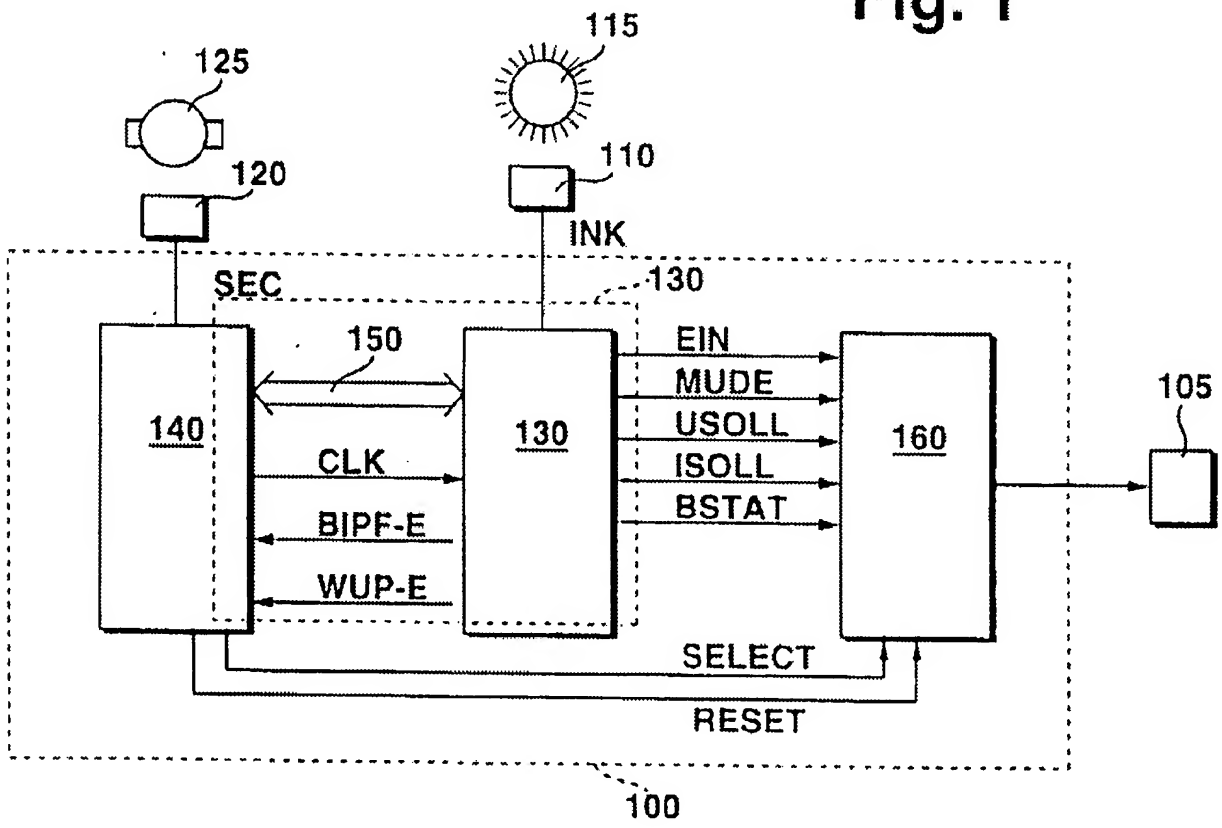
5. Claims 1 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 5,829,412 to Klatt.

Referring to claim 1, Klatt teaches a domain control system (Col. 2, lines 48-51) comprising:

a first manager comprising first logic, the first logic responsive to a first signal (Col. 1, lines 55-64), to provide a second signal representative of a first domain and a third signal representative of a second domain (Col. 2, line 66 – Col. 3, line 25); and

a second manager comprising second logic coupled (Col. 2, lines 18-29) to the first logic (Fig. 1, element 130; Col. 2, lines 52-57), the second logic responsive to the second and third signals to operate on a first value representative of the first domain (Col. 3, lines 7-25) and on a second value representative of the second domain (Col. 8, lines 38-63), and to provide a fourth signal to control an event defined by the first and second values (Col. 1, lines 53-54; Col. 2, lines 25-29).

Fig. 1



Referring to claim 10, Klatt discloses the domain control system above, wherein the first domain is angular and the second domain is time (Col. 2, lines 48-51).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,732,381 to Guido in view of U.S. Pat. No. 6,473,687 to Ando.

Referring to claim 1, Guido teaches a domain control system (Col. 1, lines 14-18) comprising:

a first manager comprising first logic, the first logic, responsive to a first signal, to provide a second signal representative of a first domain (Fig. 3, element 36);

a third signal (i.e., clock module) representative of a second domain (Fig. 3, element 35); and

a second manager comprising second logic coupled to the first logic, the second logic, responsive to the second and third signals (Fig. 3, element 40), to operate on a first value representative of the first domain and on a second value representative of the second domain, and to provide a fourth signal to control an event defined by the first and second values (Fig. 3, element 41; Col. 3, line 6 – Col. 4, line 61).

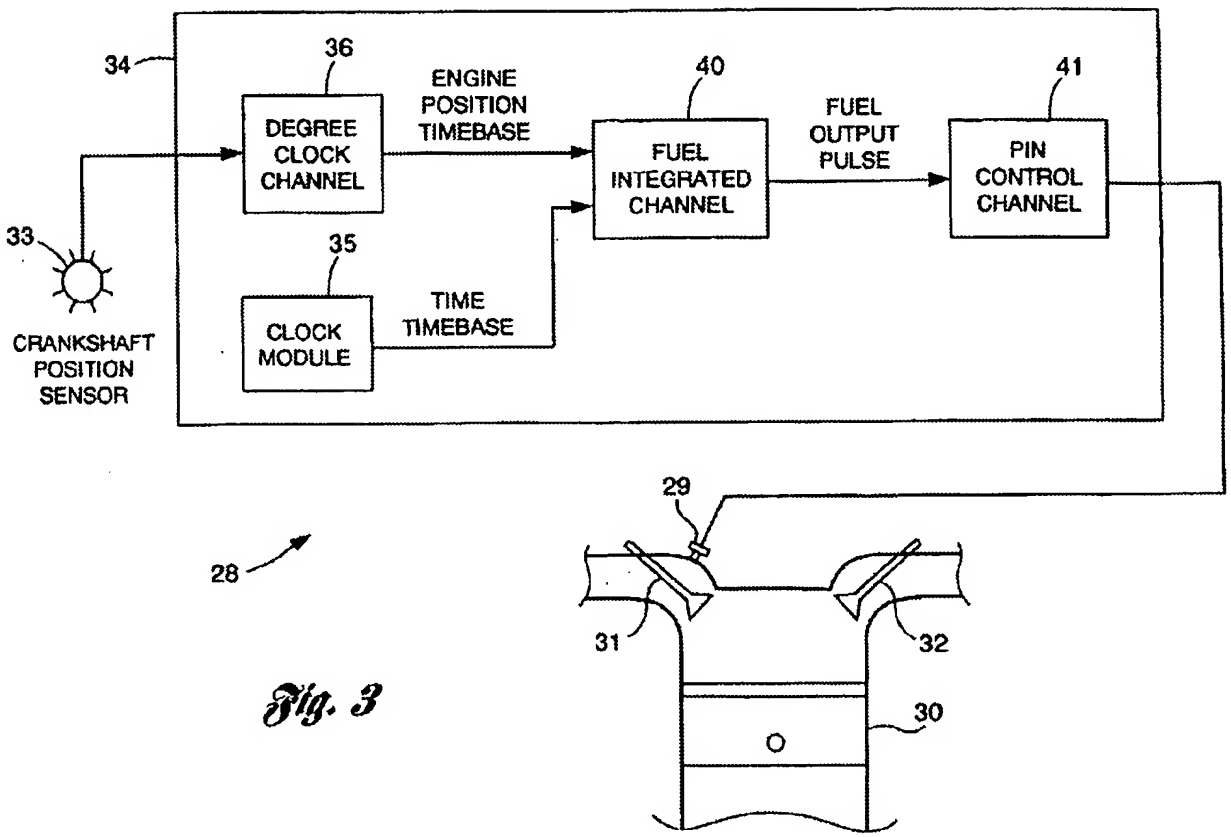


Fig. 3

Referring to claim 4, Guido teaches the domain control system above, wherein the second logic comprises: a first register to store the first value; a second register to store the second value; and add/subtract logic coupled to the first and second registers, the add/subtract logic, responsive to a fifth signal, to adjust the first and second values (Col. 3, lines 6-29; Col. 8, lines 7-41).

Referring to claim 5, Guido teaches the domain control system above, wherein the add/subtract logic adjusts the first value by a fixed amount and adjusts the second value by a variable amount (Col. 8, lines 30-57).

Referring to claim 6, Guido teaches the domain control system above, wherein the add/subtract logic adjusts the second value based on the fifth signal and adjusts the first value based on the adjusted second value (Col. 8, lines 30-57).

Referring to claim 7, Guido teaches the domain control system above, wherein the first register has a first capacity set by the first domain, and the second register has a second capacity set by the first domain and the second domain (Cols. 5-6).

Referring to claim 9, Guido teaches the domain control system above, wherein the second value is less than a product of the first value and the third signal (Cols. 5-6).

Referring to claim 10, Guido teaches the domain control system above, wherein the first domain is angular (Fig. 3, element 36) and the second domain is time (Fig. 3, element 35).

Guido fails to teach that said third signal (i.e., the clock) representative of a second domain is responsive to the first signal (i.e., crankshaft position sensor).

However, referring to claims 1 and 10, Ando teaches analogous art (i.e., an engine control unit with crankshaft sensing; See Abstract of '687) wherein a first domain is angular and a second domain is time (Col. 1, lines 26-32; Col. 4, line 64 – Col. 5, line 12 of '687), wherein the crank signal generates an event counter signal (Fig. 3, element 106 of '687) and an angle clock counter (Fig. 3, element 112 of '687) in response to the crank signal (See Fig. 3 and Col. 2, line 28 – Col. Col. 4, line 46 of '687).

Referring to claim 2, Ando discloses the domain control system above, wherein the first logic adjusts the second signal according to a magnitude of the third signal (See Fig. 3; Col. 3, lines 36-60 of '687).

Referring to claim 3, Ando discloses the domain control system above, wherein the first logic comprises: a register to hold the third signal as a plurality of bits; and add/subtract logic coupled to the register, the add/subtract logic to increase or decrease the magnitude of the third signal by most significant ones of the plurality of bits (Col. 3, line 50 – Col. 4, line 63 of '687).

Referring to claim 8, Ando teaches the domain control system above, wherein the first domain is angular, and a first capacity is set by one of a plurality less than one degree (Col. 5, lines 1-12 of '687).

Therefore, it would have been obvious to one of ordinary skill in the art at the time that the invention was made to combine the teachings of Ando with those of Guido.

One of ordinary skill in the art would have been motivated to combine these references because Ando teaches an engine control unit with reduced processing load and improved accuracy (Col. 1, lines 38-55 of '687). Examiner notes that Ando, similar to applicant's instant specification, uses signal processing hardware rather than software (Col. 3, lines 26-35 of '687).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents or publications are cited to further show the state of the art with respect to registers and add/subtract logic in a domain control system.

U.S. Pat. No. 4,618,930 to Ueno (Fig. 2).

U.S. Pat. No. 3,816,717 to Yoshida.

The following patents or publications are cited to further show the state of the art with respect to a domain control system for control of a first and second domain.

U.S. Pat. No. 5,317,614 to Davis (See Fig. 6, i.e., angle counter and delta angle counter).

U.S. Pat. No. 4,960,092 to Sasaki (See abstract, i.e., angle and time ignition signals).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean P. Shechtman whose telephone number is (703) 305-7798. The examiner can normally be reached on Monday-Friday from 9:30am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P. Picard, can be reached on (703) 308-0538. The fax phone number for the organization where this application or proceeding is assigned is (703) 746-7239.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.

SPS

Sean P. Shechtman

August 22, 2003

LEO PICARD
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